The Experience of an Objective, Structured Clinical Examination at Kaohsiung Medical University

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The objective, structured clinical examination (OSCE) is a method to assess clinical competency based on objective testing, through direct observation in a formal setting. The Kaohsiung Medical University (KMU) has pioneered OSCEs in Taiwan. In KMU, three groups of examinees—medical students in years 3 and 4, medical students in years 5 and 6, and medical students in year 7—were assessed using different OSCEs. Each OSCE was set up using the following five steps: (1) create cases; (2) decide on the items or clinical skills to be evaluated; (3) train standardized patients; (4) run the OSCE and (5) review videos to improve the curriculum. We expect that KMU will become the premier OSCE center in Taiwan.

Key Words: KMU experience, medical education, objective structured clinical examination
(*Kaohsiung J Med Sci* 2008;24:624–6)

Objective, structured clinical examinations (OSCEs) were developed by Harden and Gleeson in Dundee in 1975 [1]. OSCEs offer a method to assess clinical competency based on objective testing through direct observation in a formal setting. The OSCE has been proven to be a valuable tool for evaluating the required clinical skills of undergraduates in medicine [2–4]. For medical education, the application of OSCE to assess the clinical skills learning is still developing in Taiwan. At Kaohsiung Medical University (KMU), OSCEs have been introduced into practice over the past few years to evaluate medical students' clinical skills. This article will share our experience of using OSCEs at KMU.

The Past: OSCEs at KMU

In 1992, Professor Keh-Min Liu first introduced the concept of OSCE to KMU, and the group OSCE was initiated with 4th-year medical students. Each group was formed with three to six students to practice the OSCE. The content of the examination included history taking, physical examination and other clinical skills. Standardized patients (SPs) were used in the history taking and physical examination stations. Professor Liu also designed classrooms in KMU to conduct the OSCEs. These classrooms were equipped with a sphygmomanometer, an ophthalmoscope and an otoscope, similar to the clinic rooms in outpatient departments, and one central control room was also set up. Each OSCE classroom was equipped with a video recording

Received: Jan 5, 2009 Accepted: Jan 22, 2009
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system to allow tutors and observers to watch real-time OSCE performances from the control room. All OSCEs can also be recorded for students and tutors to review. Therefore, KMU can be considered the pioneer of OSCE implementation in Taiwan.

THE PRESENT: OSCE AT KMU

OSCE is now an indispensable examination used in medical education to evaluate clinical skills such as communication, clinical reasoning, medical procedures and management of situations. At KMU, OSCEs are conducted for three groups of examinees. The first group are medical students in the 3rd and 4th years. For these students, medical knowledge is taught through various lectures and they also learn basic clinical skills, as set by the Taiwan Joint Commission on Hospital Accreditation. They also undergo practice OSCEs for these clinical skills at the end of each semester. The second group are the clerks, medical students in their 5th and 6th years. These students begin their clinical rotations, and start having contact with patients. Therefore, they must learn communication skills with patients. The OSCE for clerks includes history taking and physical examination, and practice OSCEs are given at the end of each semester. The third group are the interns, who are medical students in their final year. These students are members of the medical teams caring for patients. They must learn all of the required clinical skills to enable them to care for patients. These skills include history taking, physical examination, clinical reasoning and management of patients. Mini clinical examinations are used to evaluate the required skills developed by the interns. For some clinical skills set by the Taiwan Joint Commission on Hospital Accreditation, department-based OSCEs in internal medicine, surgery, pediatrics, obstetrics and gynecology are also used. To fulfill our school's needs for practice OSCEs, we are planning to build more than fifteen OSCE classrooms.

Process of developing OSCEs at KMU

To develop OSCEs in KMU, we used the following five steps. First, we developed cases, which were created based on real clinical situations encountered by different specialists in all departments. Cases with common and typical presentation in clinic were selected for development. The content of each case should include the following sections: (1) the patient's background including gender, age, body weight, height, and behavior; (2) the clinical setting of the OSCE, that is whether it is in the OPD, ward, or emergency room; (3) the patient's chief complaint, that is the illness which led the patient to come to the hospital; (4) the patient's present illness, that is the course of clinical symptoms presented by the patient; (5) the past medical history of the patient, including medication history and other systemic diseases; (6) the results of physical examination; (7) the results of laboratory and imaging examination with imaging pictures; (8) the differential diagnoses; and (9) management of the patient, including drugs prescribed. Each section of the case has a checklist for the tutor to evaluate the examinee. A nine-point scale was used for the checklist. Three points is considered acceptable, four to six points is considered an average performance and seven to nine points is excellent. The tutors and the SPs evaluate the performance of the examinees. The format of the checklists for tutors and SPs are different. The tutors evaluate specific clinical performance and SPs assess communication skills. All cases and checklists are reviewed by other specialists or the OSCE committee at KMU, and revised if needed. We have successfully developed more than 40 cases across all clinical departments.

The second step was to decide which clinical skills should be assessed for different groups of examinees. Once the test items were decided, we could easily select these items from the cases.

The third step is SP training. The detailed process of SP training in KMU will be discussed in another article in this journal. We have introduced an SP training center. To date, more than 40 SPs have been recruited from the population and include retired teachers and officers. Before the practice OSCE, the SPs undergo a series of training sessions to be certified as qualified by the SP training center. In addition, the SP training center also provides continuing education for SPs on a regular basis, and includes the skill of feedback and expression of body language, for example. After the above steps are complete, the OSCEs can begin. The tests at each station of the practice OSCE last for 30 minutes, which includes 22 minutes of examinee interaction with the SP, 3 minutes of scoring by the tutor and SP, and 5 minutes of feedback given by the tutor and the SP. After the test, the final step is to review the video and identify any weakness in all courses by a review conference.

All tutors, SPs and members of the OSCE committee participate in the review conference. The cases and checklists are also revised in this conference.

The Future: OSCEs at KMU

The use of OSCEs to assess the clinical skills of medical students is well accepted in Taiwan's medical education. In the future, to improve the quality of OSCEs at KMU, further steps are planned. We will create more clinical cases for OSCEs. In addition to our medical college, we will endeavor to encourage other colleges at KMU to use OSCEs to assess clinical skills. The SP training center will recruit more qualified volunteers to participate in OSCEs. To maintain objective assessment, the tutors and SPs will receive regular continuing education. Through these efforts, we expect that KMU, the pioneer of OSCE implementation in Taiwan, will become the premier OSCE center in Taiwan.

Acknowledgments

We would like to express our deep appreciation to Professor Chung-Sheng Lai, Professor Keh-Min Liu and all the members of the OSCE committee at KMU. Without their efforts, the OSCE would not have been implemented so successfully at KMU.

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